Remarks:

The present Office Action rejected claims 1-8 and 13 under 35 U.S.C. § 102(b), and claims 1-8, 11 and 13 under 35 U.S.C. § 103(a). In section 8 of the Office Action dated December 26, 2002, the Examiner suggested supportive data could be presented to show that the carbon black of Yau would affect the basic and novel characteristics of the claimed invention. The Applicant's prior response, dated October 14, 2003 provided a declaration providing experimental results in support of the claimed invention. However, the Examiner was not persuaded by the presented results in the declaration due to a lack of sufficient similarity in the compounds tested and compared. Applicants appreciate the Examiner's guidance on this issue, and offer to correct this problem.

Appended to this Amendment is a declaration of the Applicant, which is entitled DECLARATION OF KANEYOSHI HAYASHI UNDER 37 C.F.R. §1.132. The declaration reports experimental results as proof that the claimed invention possesses unexpectedly advantageous and superior properties, and thus that using the carbon black of Yau would affect the basic and novel characteristics of the claimed invention. As shown by the results, compared with a rubber composition containing carbon black, a rubber composition under the present invention, being free of carbon black, has a prolonged service life and durability.

More particularly, three compounds were prepared in a manner as shown in the specification of the current application. The first (Sample A) is a composition according to the present invention, the second (Sample B) is composed of the substances of Example 1 of Yau that contained carbon black. The third (Sample C) is identical in composition to Sample B, except that Sample C contains no carbon black. The samples of the compounds were tested by exposure to a chlorinated water as stated in the attached declaration. The two compounds of the present claimed invention not containing carbon black, Samples A and C, demonstrated improved qualities in comparison to the compound of Yau, thereby demonstrating unique properties in resistance to chlorine.

The patent to Yau discloses a rubber composition that includes carbon black, *see*, e.g., column 7, line 15; column 9, line 21; and column 9, line 68. Since Yau does not disclose a composition that excludes substance carbon black, which leads to improved

chlorine resistance, Yau does not anticipate the current invention. Furthermore, because the appended declaration establishes unexpectedly advantageous and superior properties over the cited art, any *prima facie* case of obviousness that might have been established has been rebut. Accordingly, Applicant respectfully requests the rejections of the claims (1-8, 11 and 13) under 35 U.S.C. §§ 102(b) and 103(a) be withdrawn.

In view of the foregoing, Applicant respectfully requests that a Notice of Allowance be issued in this case.

Respectfully submitted,

HAYASHI, Kaneyoshi

By: _____

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	**Kaneyoshi HAYASHI**
Serial. No.	:	**09/981,541**
Filing Date	:	**10/15/2001**
For	:	**RUBBER COMPOSITION**
Examiner	:	**James J. Seidleck**
Art Unit	:	**1711**

Honorable Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF KANEYOSHI HAYASHI UNDER 37 CFR §1.132

I, Kaneyoshi Hayashi, a citizen of Japan, do hereby declare the followings:

1. I am the sole inventor of the above-referenced patent application.

2. I received a Bachelor of Science degree from Department of Industrial Chemistry in Faculty of Engineering in Kogakuin University, Tokyo, Japan at March in 1967. I have been studying for an Ph.D. at Graduate School of Bio-Applications and Systems Engineering of Tokyo University of Agriculture & Technology as a part time student since April in 2002.

3. From April in 1967 through the present, I have been working for SANKEI GIKEN Co. Ltd. as President.

4. I have reviewed the Office Actions dated June 19, 2003 and February 11, 2004 in the above-referenced patent application in which Claims 1 to 8, 11, and 13 are rejected under 35

U.S.C. 102(b) as being anticipated by Yau, S. (USP 5080942) and 103(a) as being unpatentable over Yau, S. (USP 5080492) in view of Patel, R (USP 4654402). However, I respectfully disagree with the Examiner's prior assertions as supported by experimental results presented in the attached Appendix B.

5. Appendix B provides experimental results from experiments that I have conducted. These results contain further supportive data showing that the use of carbon black, as taught in Yau, would affect the basic and novel characteristics of the invention recited in the pending claims. More particularly, I believe the data establishes that the present invention provides unique properties in resistance to chlorine, unlike the technology taught in Yau or Patel. Thus, I believe that the present invention would not have been obvious to one of ordinary skill in the art.

6. Based on my knowledge and experience as one of skill in the art, it is my opinion that results similar to the foregoing would be obtained with other formulations within the scope of the claims. It is also my opinion that similar results would also be obtained for other compositions prepared in accordance with the teachings of the prior art.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

30, APRIL, 2004

Date

Kaneyoshi HAYASHI

Appendix B

1. Sample Preparation

Samples A and C of compositions according to the present invention and Sample B (as a comparative example) of another composition including black carbon were prepared in a manner as shown in the specification of the application. The compositions of the samples are summarized in Tables I and II.

Table I. Sample A Composition

Component	Sample A
EPDM	100
ZnO	5
Stearic acid	1
Polybutene	20
Processing oil	15
Clay	30
Vulcanizer (S)	1.5
CBS	2
White carbon	30
Silane coupler	1

Table II. Samples B and C Compositions

Yau Example 1 (Chemicals)	Present (Chemicals)	Present (Provider)	Sample B (Phr)	Sample C (Phr)
"Polysar" XC-955 (rubber)	EP 98	JSR	105	105
"Nordel" 1470 (rubber)	EPT3070	Mitsui Chemical	40	40
"Hisil" 532EP (silica)	Hisil 233T	PPG Japan	20	20
"Sunpar" 2280	Paraffin Oil PW-90	Idemitsu Kosan	60	60
Zinc Oxide	Zinc Oxide	Sakai Chemical	5	5
"Agerite" White	NOCRAC DP	Ouchishinko Chemical	0.8	0.8
"Ultranox" 257	Antage BHT	Kawaguchi Chemical	1.5	1.5
"Struktol" WB-16	Struktol WB-215	S&S Japan	2	2
Red Lead	Minium	Mitsui Kinzoku	4	4
"Furnex" N754 (carbon black)	Asahi #35	Asahi Carbon	30	-
"Vinyzene" SB-1 ELV	Novaron AGZ	Toagosei	1.5	1.5
"Hydral" 710	Higilite H42-M	Showa Denko	45	45
"Ucarcil" RC-1	Si69	Degussa Japan	1	1
"SR-297"	NK Ester BG	Shin-Nakamura Chemical	6	6
"Indopol" H-300 (polybutene)	Polybutene HV-100	Nippon Petrochemicals	10	10
"Vulcup" 40 KE	Par Butyl P-40	NOF Corporation	10	10

Sample A is a typical example composition according to the present invention. It is clear from Table I that the composition does not include carbon black. Sample B has a composition corresponding to the composition of Example 1 of Yau (US Patent No. 5,080,942). Sample C has the same composition except lacking carbon black as shown in Table II such that the composition of Sample C falls in the scope of the present invention.

2. Chlorine resistance test

Samples A, B, and C were placed in water with a chlorine concentration of 3000 ppm at a temperature of 80 Celsius. The Samples were examined by appearance, weight change, and length change from before to after a 24-hour resistance test.

3. Experimental results

The experimental results are summarized in Table III and pictures of the Samples before and after the test are attached hereto.

Table III Weight and length changes

		before test	after 24 hrs
Sample A	Weight change	–	+12.25%
	Length change	100 mm	110 mm
Sample B	Weight change	–	+83.92%
	Length change	100 mm	127 mm
Sample C	Weight change	–	+58.13%
	Length change	100 mm	110 mm

As shown in Table III, it is clear that Sample B was much more elongated and gained much more weight after the test than Sample C. Therefore, it is plausible that the existence of carbon black caused severer damages to the sample.

Pictures 1-4 shows how the Samples were damaged after the test. It is also clear that Sample B was much more elongated and deteriorated after the test from the appearance shown in the pictures if compared to Samples A or C. Therefore, it is plausible that the existence of carbon black caused severer damages to Sample B.